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Healthy Ageing and Well-Being at Work

Kristina Potočník

Achieving healthy ageing and well-being at work has become an issue of growing importance, particularly with recent changes in retirement legislation in Europe and beyond. Some of these changes include the abolition of mandatory retirement age in the UK and increased retirement ages in other EU countries, in most cases from 65 to 67 years of age in countries such as Germany, France, Spain, and Denmark (Peiró, Tordera & Potočník, 2012). Research to date has not yet provided unequivocal support regarding how ageing affects employee well-being. Whereas some studies have observed positive effects, others have reported negative age effects on employee well-being (e.g., Alkjaer, Pilegaard, Bakke & Jensen, 2005; Sui, Spector, Cooper & Donald, 2001). Regarding occupational well-being in particular, most of the research has supported a U-shaped relationship between age and well-being in the workplace with younger and older employees showing the highest levels of occupational well-being (e.g., Zacher, Jimmieson & Bordia, 2014). The existing evidence therefore seems to suggest that age may not necessarily have an adverse impact on health and well-being at work, but much more research is needed to understand this relationship. This chapter addresses the issue of healthy ageing at work by first integrating the existing evidence around the age effects on psychological and subjective well-being among older employees and then analysing different underlying mechanisms and protective factors

implicated in the age - well-being relationship in order to shed more light on how healthy ageing at work can be achieved.

Introduction

It has widely been acknowledged that the world population is ageing. According to the recent UN statistics, global life expectancy is predicted to increase from 69 years in 2005-2010 to 76 years in 2045-2050 (UN, 2013). In more developed regions, such as EU countries, this increase is projected to jump from 76 years in 2005-2010 to 83 in 2045-2050. This ageing tendency in the developed regions can also be seen from the population distribution in different age groups. In 2013, 27.5 per cent of the population in developed regions was over 60 and this is projected to increase to up to 41.5 per cent by 2050. When exploring the employment rates in the EU, recent data shows an employment rate of 51.8 per cent in the 55-64 age category (Eurostat, 2015). Due to these demographic projections, different changes to retirement legislation and practices around the world have been implemented, such as the abolition of the retirement age in the UK, and postponing the retirement age or introducing phased retirement in other EU countries (Peiró et al., 2012).

In light of these changes, there has been an increasing concern about how to achieve healthy ageing. On the one hand, one could argue that the policy-level benefits, such as the provision of improved pension schemes and the access to high quality health care, could help achieve this goal. On the other hand, however, although having financial security and medical assistance is important for health and well-being in old age, there are many other personal and contextual factors that contribute to healthy ageing. Previous research, for instance, has found that having different resources to cope with everyday life, including social resources and maintaining an active lifestyle is very important for psychological well-being and quality of life in older adults (e.g., Cho, Martin & Poon, 2015; Kahana, Kelley-Moore & Kahana, 2012; Potočnik & Sonnentag, 2013).

The aim of this chapter is to review and integrate previous research that has explored age effects on psychological well-being in older employees and the underlying mechanisms of such effects. Drawing on different frameworks, such as activity theory (Havighurst, 1963), conservation of resources theory (COR; Hobfoll, 2001) and selective optimization with compensation theory (SOC; Baltes & Baltes, 1990) among others, the chapter then discusses different facilitating factors important for achieving successful ageing and sustained well-being in older employees. Particular attention is focused on different factors that may protect well-being in old age which should be included in intervention programmes aiming to achieve successful and healthy ageing.

Conceptualization of healthy ageing

The concept of “healthy ageing” is one of many different terms in the literature that relate to “*ageing well*” (Foster & Walker, 2015) and contradict the controversial assumptions of one of the early theories of ageing called the disengagement theory (Cumming & Henry, 1961). Disengagement theory views ageing from a negative perspective suggesting that our societies disengage from older employees through the process of retirement and older employees mutually withdraw from societies because they cannot engage in productive roles anymore (Potočník & Kowalski, 2015). This approach to ageing has been clearly rejected in the more contemporary literature highlighting an activity perspective whereby older adults are considered as an important “resource” with an active part to play in our societies.

Successful ageing, active ageing, positive ageing, productive ageing, proactive ageing, sustainable ageing and competent ageing are other terms that scholars and policy makers have used to refer to older adults as active and productive part of our society. Although “*ageing well*” is difficult to operationalize, there is consensus in the literature that the criteria

of successful or healthy ageing include subjective well-being, life satisfaction and longevity (Jopp & Smith, 2006; Zacher, 2015a).

Perhaps successful ageing and active ageing have been the most frequently used terms in both academic and policy and practitioner circles. The term active ageing has been predominantly used in Europe and highlights the active role older people have in our societies regardless of their physical health or employment status (WHO, 2002).

Specifically, active ageing has been defined as “the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age.” (WHO, 2002: 12). In contrast, the concept of successful ageing has long been established in the ageing discourse and gerontology literatures in the US (Butler, 1974; Rowe & Kahn, 1987, 1997) which define this concept in terms of low probability of disease and disease-related disability, high cognitive and physical functional capacity, and active engagement with life. More recently, Zacher (2015a) has operationalized successful ageing at work in terms of positive deviation from the average trajectory in a favourable outcome, such as well-being, across the working life span. In other words, this definition suggests that employees are ageing successfully if they are, for instance, healthier or if their decline in work ability is lower, compared to their counterparts. Kooij (2015a) has also provided a recent conceptualization of successful ageing using a sustainability perspective and paying particular attention to the proactive role of employees in achieving successful ageing. According to Kooij (2015a, 2015b), successful ageing is achieved if employees manage to maintain their health, motivation and work ability now and in the future. In order to age successfully, employees have to strive for the continuous person-job fit which can be achieved by engaging in different proactive behaviours. Although Zacher (2015b) has challenged this sustainability perspective of successful ageing, questioning particularly the

“maintenance” as an indicator of successful ageing, Kooij (2015b) has further convincingly argued about the usefulness of this approach. She has suggested that considering the resource-based dimension of sustainability, successful ageing can be better understood by focusing on preservation and regeneration of resources which are instrumental in achieving work-related goals and consequently, successful ageing. She further clarified that the maintenance of health, motivation, and work ability could be considered as a minimum requirement to evaluate whether an employee has aged successfully because it refers to maintaining the current levels of functioning despite experiencing new challenges in the way (Kooij, 2015b).

Although there are differences between active, successful and healthy ageing (see Foster and Walker (2015) for a more detailed conceptual analysis), for the sake of simplicity in this chapter I use them interchangeably to refer to older employees as valuable assets in organizations who possess important competences and knowledge to advance organizational goals and therefore should be considered as active participants in the organizations and wider society. Following Zacher (2015a), I will focus on three central elements of healthy and successful ageing to address well-being in older employees: (1) outcomes of healthy ageing (i.e., criteria for successful ageing), including a combination of objective and subjective criteria, such as physical health and absence of illness on one hand and subjective and psychological well-being on the other hand; (2) explanatory mechanisms underlying the age - well-being relationship, such as age-related changes in personal and contextual factors; and (3) boundary conditions (i.e., facilitating and constraining factors) that influence well-being in older employees, including personal resources and engaging in successful coping strategies. The overarching aim of this analysis is to shed more light on how organizations and wider communities could optimize the opportunities for active participation of older

employees in our societies and help them achieve and maintain psychological and subjective well-being in their workplaces.

Outcomes of healthy ageing in the workplace

Undoubtedly, one indicator of successful ageing is sustaining health and well-being in older adults and, in addressing this matter, we should first understand how age affects subjective and psychological well-being and physical health. A review of the literature in this area reveals vast research into the relationships between age and occupational well-being, looking at indicators such as job satisfaction, emotional exhaustion, depersonalization, vigor at work, and occupational stress, among others (Ng & Feldman, 2010). Although some studies reported detrimental effects of age on occupational well-being, such as occupational strain (Kirckaldy & Martin, 2000) and cognitive irritation (Rauschenbach, Krumm, Thielgen & Hertel, 2013), most of the past research has provided support for the U-shaped relationship whereby employees in the 20-40 age group experience lower levels of occupational well-being compared to their younger and older counterparts (Birdi, Warr & Oswald, 1995; Clark, Oswald & Warr, 1996; Warr, 1992; Zacher et al., 2014). A recent meta-analysis has found positive effects of age on a wide array of occupational well-being indicators, although the effect sizes ranged from weak to moderately strong (Ng & Feldman, 2010).

Going beyond the occupational well-being indicators, some studies have explored the age effects on older employees' subjective and psychological well-being, such as mental health, depression, anxiety and quality of life (e.g., Ng & Feldman, 2013). Compared to the research on occupational well-being, findings regarding the age effects on employee psychological and subjective well-being have been less consistent. On one hand, some studies have suggested a positive relationship with age and mental health (e.g., Ng & Feldman, 2013; Sui

et al., 2001). Similarly as in the case of job satisfaction, Clark et al. (1996) observed a U-shaped relationship between age and mental health suggesting that also when it comes to general mental health, younger and older employees are the healthiest.

On the other hand, Nuñez (2010) has shown positive age effects on depression and mental illness although these effects became less detrimental among older workers which is again in line with the research that reported a U-shaped relationship between age and health (e.g., Clark et al., 1996; Zacher et al., 2014). In terms of physical health indicators, this study also reports positive age effects on health problems, in particular in relation to arms and hands, back and neck, chest and breathing, heart and blood, the digestive system, and diabetes (Nuñez, 2010). In a recent meta-analysis, Ng and Feldman (2013) also found support for the positive effects of age on physical health indicators, such as blood pressure, cholesterol levels and body mass index. These authors also observed positive but weak effects of age on insomnia and muscle pain. In terms of health-related behaviour, they only found weak effects of age on smoking: older employees were more likely to smoke compared to their younger counterparts.

This previous research is summarized in Table X.1. Based on previous findings, we might conclude there is little evidence to suggest that older employees suffer from impaired subjective and psychological well-being in general and at work in particular. In fact, existing studies rather suggest that older employees enjoy higher psychological well-being compared to their middle-aged peers. In terms of more objective health indicators, however, research seems to suggest that older employees exhibit poorer physical health compared to their younger counterparts, although the effects are rather weak. Hence, overall, we might conclude that older employees do not suffer from impaired health and well-being and that

more serious decline in health in old age seems to occur at much later stages in life, after older adults have already withdrawn from active workforce participation (Asakawa, Senthiselvan, Feeny, Johnson & Rolfson, 2012; Ng & Feldman, 2013; Wrosch, Schulz, Miller & Lupien, 2007). These findings further reject the assumptions of the disengagement theory of ageing (Cumming & Henry, 1961) and suggest that older adults should be supported in extending their working lives. Different explanatory mechanisms are discussed next in order to shed more light on what could potentially account for these effects on the health and well-being of older workers.

Insert Table X.1 about here

Explanatory mechanisms of age effects on health and well-being

Literature on ageing in the workplace has discussed different processes that might explain the age effects on employee well-being. In terms of occupational well-being, the so-called job change hypothesis has been suggested to explain why older employees tend to experience higher job satisfaction (Ng & Feldman, 2010; Rauschenbach et al., 2013; Wright & Hamilton, 1978). This hypothesis suggests that as employees age they tend to get better jobs because they have more experience and improved skills. Therefore, they are better equipped to cope with job demands which consequently leads to improved occupational well-being in older employees (Siu et al., 2001). Related to the job change hypothesis, it has also been suggested that older employees' have higher salaries and that their jobs are more congruent with the type of jobs they want in life which positively impacts their job satisfaction (White and Spector, 1987).

Some scholars have also suggested that positive age effects on occupational health and well-being might be due to greater internal locus of control in older employees and improved coping strategies (Aldwin, Sutton, Chiara & Spiro, 1996; Lachman & Weaver, 1998). The latter is in agreement with the life span theory of control (Heckhausen, Wrosch & Schulz, 2010) which suggests that the use of primary control coping strategies (i.e., active, problem-focused strategies that change the environment to bring it into a line with one's preferences) increases with age, reaching its peak in the 45-64 age group. In other words, previous research and the life span theory of control suggest that, as employees age, they tend to use a more proactive coping approach whereby they appraise work-related demands as less stressful. In turn, this might lead to lower levels of work-related strain and ill-health in older employees compared to their younger colleagues. Research has also suggested that older employees may exert more primary control in their workplaces because they have more job control compared to their younger peers. This argument is based on the assumption that older employees are more likely to have higher positions in their organizations and greater experience which gives them more job control (Kanfer & Ackerman, 2004; Rauschenbach et al., 2013). Therefore, higher job control may not only be a useful resource (or facilitating factor) for older employees to cope with occupational stress as suggested by the job-demands-control model (Karasek, 1979), but it also helps them enhance and apply primary coping strategies, all of which can help explain the positive age effects on health and well-being. Furthermore, in addition to greater experience and more proactive coping, the shift from extrinsic to intrinsic motives as people age (e.g., putting less value on pay and promotion opportunities and more on maintaining positive relationships at work) has been suggested as explanatory mechanisms as to why older employees might appraise certain demands or threats as less stressful, relative to their younger counterparts, ultimately leading

to the experience of better psychological well-being (Clark et al., 1996; Kooij, De Lange, Jansen, Kanfer & Dikkers, 2011; Rauschenbach et al., 2013).

In relation to the motivational mechanisms underlying healthy ageing, some of the most recent work has been driven by another life span theory, specific to motivation, called socio-emotional selectivity theory (SST; Carstensen, 1995; 2006). This framework suggests that the subjective perception of how much time individuals have left to live (i.e., future time perspective) more strongly predicts a range of cognitive, emotional and motivational outcomes than an individuals' chronological age alone. According to the SST, people who perceive their future time to be limited put more emphasis on emotionally meaningful social goals to optimize their well-being. In contrast, those who perceive their future time to be open-ended are more likely to prioritise instrumental social goals such as learning new skills and expanding knowledge (Carstensen, 2006; Kooij, De Lange, Jansen & Dikkers, 2013a). Given that individual chronological age is correlated with the time remaining to live, as people age, the more limited time perspective they perceive and therefore they prioritise more emotionally meaningful goals to enhance their well-being. This theory predicts that as long as individuals experience a congruence between the perception of their future time perspective and the type of goals they prioritise, they should experience enhanced subjective well-being. A recent study by Kooij and colleagues (2013a) has empirically explored these assumptions. Specifically, this study suggests that future time perspective and perceived subjective health may explain the age-related changes in four different types of employee motives: (1) growth (i.e., preference for job characteristics related with achievement and mastery such as challenging work; expected to decrease with age), (2) esteem (i.e., preference for job characteristics related with perception of recognition and status; also expected to decrease with age); (3) security (i.e., preference for job aspects that protect employees against

the loss of material and physiological needs, such as pay and job security; expected to increase with age), and (4) generativity (i.e., preference for job aspects related with sharing skills with younger peers; also expected to increase with age). In turn, these four motives were suggested to predict occupational well-being operationalized in terms of work engagement. They found that growth and esteem motivations decreased with age because of the age-related decrease in open-ended future time perspective, whereas poor subjective general health explained the positive relationship between age and security motives and negative relationship between age and growth motives. Growth, esteem and generativity motives in turn positively predicted work engagement (Kooij et al., 2013a). This study provides support for the SST in that we should focus more on subjective perceptions of employee ageing, such as future time perspective and subjective health perception rather than chronological age to manage older employee health and well-being successfully.

When it comes to negative age effects on health and well-being, the literature has suggested that age-related decline in some cognitive abilities, such as working memory, might explain these effects (Potočnik & Kowalski, 2015; Rauschenbach et al., 2013; Salthouse, 2012). Due to this decline older employees might perceive they are not capable of coping with certain job demands effectively which could lead to increased experience of strain and poorer well-being. It is important to note, however, that according to the “mental exercise” or “use-it-or-lose-it” hypothesis (Finkel, Andel, Gatz & Pedersen, 2009; Salthouse, 2006), age-related cognitive decline can be ameliorated by encouraging older employees to engage in intellectually stimulating activities. This is discussed further in the next section on boundary conditions of healthy ageing at work.

Table X.2 shows a summary of the above reviewed processes that may account for the age effects on health and well-being at work. There seems to be consensus in the literature that older employees' experience and occupational tenure help them refine their knowledge and skills and also other personal resources such as (internal) locus of control and use of coping strategies (Ackerman, 1996). It is these age-related gains that have been suggested to lead to enhanced and sustained health and well-being in older employees. These different resources and other facilitating and constraining factors that might influence older employees' well-being are discussed next in order to provide an analysis of different boundary conditions needed to achieve healthy ageing at work.

Insert Table X.2 about here

Facilitating and constraining factors of achieving healthy ageing at work

There is a considerable amount of gerontology, life span and occupational psychology research that has explored different factors implicated in achieving successful and healthy ageing (Zacher, 2015a). Most of this research has been driven by the life span model of selective optimization with compensation (Baltes & Baltes, 1990), activity theory (Havighurst, 1963), conservation of resources theory (Hobfoll, 2001), and continuity theory (Atchley, 1989). Towards the end of this section, research exploring the role of different working conditions drawing on different theoretical frameworks is also discussed.

Selective optimization with compensation model

The selective optimization with compensation (SOC) model is one of the leading theoretical frameworks that aims to explain what strategies individuals are likely to use in order to cope with age-related losses and gains over their lifespan (Zacher, 2015a). This model suggests

that, at any point in time, people's resources are limited and hence people have to select life domains that are of importance to them and allocate these limited resources to these chosen domains in order to increase the likelihood of their success (Baltes & Rudolph, 2012). Specifically, the theory suggests that people may use three behavioural strategies to cope with age-related opportunities or losses: (1) selection, (2) optimization and (3) compensation strategies (the SOC strategies hereinafter). Selection strategy refers to setting and prioritizing goals either in terms of personal preferences or due to perceived loss of resources, optimization strategy is about obtaining and improving the means to achieve the set goals, and the compensation strategy refers to obtaining alternative means to maintain a desired level of functioning in order to fulfil the selected goals. There is evidence to suggest that adults from the 43-67 age group are more likely to use SOC strategies compared to their younger and older counterparts (Freund & Baltes, 2002). Research on healthy ageing, based on the SOC model, further suggests that since aging itself is involved with a loss of various resources, older employees who use SOC strategies may more successfully cope with such loss and subsequently may sustain their well-being for longer (Baltes, 1997; Zacher, 2015a). Therefore, in order to achieve healthy ageing, older employees are recommended to engage in SOC strategies when dealing with their work demands in order to protect their health and well-being.

Activity theory

Activity theory is another theoretical framework that has been used to study successful ageing, particularly looking at the criteria of health and well-being (Havighurst, 1963). According to this approach, fulfilling social and psychological needs, such as engaging in different activities, is continuous across the life span and older adults should maintain the active lifestyle in order to achieve healthy ageing (Potočník & Sonnentag, 2013). In fact,

previous research has confirmed the importance of active lifestyle for reduced mortality and decreased cognitive impairment risks (Glass, Mendes De Leon, Marottoli & Berkman, 1999; Wang, Karp, Windblade & Fratiglioni, 2002), greater life satisfaction and positive affect (Nimrod, 2007), lower stress and depression levels (Herzog, Markus, Franks & Holmberg, 1998; Patterson, 1996; Potočnik & Sonnentag, 2013), and enhanced quality of life (Potočnik & Sonnentag, 2013). These studies have looked at the wide range of different productive and non-productive activities to operationalize the active lifestyle of older and middle-aged adults, such as volunteering, providing help to relatives and neighbours, participating in community organizations, attending social clubs, taking-up educational courses, and engaging in physical exercise, amongst others (Potočnik & Sonnentag, 2013).

On the whole, research based on activity theory suggests that maintaining an active lifestyle helps older adults achieve healthy ageing because engaging in activities implies they are achieving valued personal goals which enhances their positive self-concept, self-esteem and sense of competence (Warr, Butcher & Robertson, 2004). Engaging in activities also fulfils the needs for affiliation (i.e., opportunities to socialize), time structure and generativity all of which should contribute positively to individual well-being (Griffin & Hesketh, 2008; McAuley et al., 2000; Poon & Fung, 2008). Furthermore, as mentioned before, individuals who engage in different activities might be more mentally active which was argued to slow down their age-related cognitive decline and consequently foster their healthy ageing. Engaging in physical exercise was also showed to improve a variety of physical health indicators, such as cardiovascular health and strength and reduce chronic disease risk factors (Jenkins, Pienta & Horgas, 2002). Therefore, based on the evidence that largely supports activity theory, we could conclude that as long as older employees engage in different

activities (particularly going to sports and social clubs – see Potočník & Sonnentag, 2013), they should maintain their well-being and achieve healthy ageing.

Conservation of resources theory

Another theoretical approach that has been used to explain what factors may protect health and well-being in older employees is the conservation of resources theory (COR; Hobfoll, 2001). In essence, this model suggests that “individuals strive to obtain, retain, protect, and foster those things that they value” (Hobfoll, 2001: 341). These “valued things” are called resources and can be further classified into two categories: 1) resources “that are valued in their own right” (Hobfoll, 2001: 339) and 2) resources that are valued because they are instrumental in achieving and/or protecting the resources in the first category. According to this theory, people are likely to experience stress and impaired well-being when their valued resources are either lost or threatened with loss. When applied to the context of healthy ageing, the COR theory would predict that older employees must have their valued resources at their disposal in order to protect their health and well-being and to minimize the experience of occupational stress (Potočník & Sonnentag, 2013).

For instance, constructs such as positive self-concept, self-esteem, and self-efficacy which can be obtained from engaging in different activities as discussed above could be considered as valued motivational resources in accordance with the COR theory which might help protect subjective and psychological well-being. Other resources we could suggest as important for protecting older employees’ well-being are financial (e.g., savings and income), cognitive (e.g., working memory) and social (e.g., having a good network) (Hobfoll, 2001; Wang & Shi, 2014). Some of these resources, such as motivational resources, may directly affect older employee well-being whereas others might be important to gain and protect other

valued resources – for instance financial resources may be considered as important in order to gain and maintain social resources. Importantly, based on this approach the loss or a mere threat of a loss of any of these resources that older employees value may lead to impaired health and well-being. Therefore, based on this approach, healthy ageing can be achieved by facilitating older employees to gain and also maintain the resources they value over time.

Continuity theory

Continuity theory (Atchley, 1989) suggests that older employees need to maintain their daily routines and time structure once they retire in order to experience as little stressful and unexpected disruptions as possible to achieve healthy and successful ageing. Bridge employment, defined as the type of employment that occurs after the individual has retired from a full-time job but before he/she permanently withdraws from the workforce (Feldman, 1994; Kim & Feldman, 2000), could help achieve these goals, consequently leading to better adjustment of older employees after they retire from their full-time jobs (Dingemans & Henkens, 2014; Müller, De Lange, Weigl, Oxfart, Van Der Heijden, 2013). Empirical evidence has largely supported this suggestion showing that older adults who engage in bridge employment experience greater life satisfaction (Kim & Feldman, 2000; Topa, Alcover, Moriano & Depolo, 2014), job satisfaction (Topa et al., 2014), psychological well-being (Wang, 2007), mental health (Zhan et al., 2009) and quality of life (Topa et al., 2014) and also fewer major diseases and declines of daily functions (Zhan, Wang, Liu & Shultz, 2009). More recently, Dingemans and Henkens (2014) found that bridge employment was related to greater life satisfaction only if older employees sought the bridge employment for intrinsic rather than extrinsic motives. These authors also report that bridge employment mitigated the adverse effects on life satisfaction that involuntary retirement from a full-time job can bring. This is a very significant finding given that past research has consistently

documented the detrimental effect of involuntary retirement on psychological well-being (Potočník, Tordera & Peiró, 2010; Wang & Shultz, 2010; Warr, Butcher, Robertson & Callinan, 2004). Based on this evidence, we could consider bridge employment as an important protective factor of health and well-being in older individuals.

Other research

Finally, we should also examine a set of studies that explored facilitating factors of healthy ageing which draw on a range of different frameworks. For example, based on *social identity theory* (Tajfel & Turner, 1979), Cheung and Wu (2014) found that individuals who affectively identified themselves with older workers (e.g., “I am glad to be an older worker”) experienced better adaptability and health. However, those who cognitively identified themselves with older workers (e.g., “I see myself as an older worker”) experienced better adaptability and health only if they had a positive attitude towards ageing.

Mauno, Ruokolainen and Kinnunen (2013) explored the relationships between different job stressors and well-being indicators among younger and older employees drawing on *psychological contract theory* (Rousseau, 1989) and SST (Carstensen, 1995). On one hand, they found that work-family conflict was less harmful for life satisfaction and that workload had a weaker negative impact on job satisfaction among older employees relative to their younger counterparts. On the other hand, however, they found that job insecurity had a stronger negative impact on older employees’ job satisfaction, vigor and work-family enrichment compared to younger employees. This study shows that older employees are not necessarily more resilient to job stressors and, that in certain situations, such as the case of job insecurity, they could be more adversely affected than their younger counterparts.

In a recent study following *the life span theory of control* (Heckhausen, Matz-Costa, James & Pitt-Catsoupes, 2010), Besen et al. (2015) found that in older employees with higher levels of personal control, job demands had less adverse impact on mental health. In the sub-group of younger employees, higher job control buffered the negative relationship between job demands and mental health, but only for those younger employees who had high personal control.

There are also a couple of studies that looked at different organizational, HR and workplace-related factors as boundary conditions of age-health relationships. For instance, Taylor, McLoughlin, Meyer & Brooke, (2013) explored age, gender and socio-economic differences in the relationships between different work characteristics and job satisfaction and psychological well-being at work, respectively. Their results showed that everyday discrimination at work had a stronger negative relationship with job satisfaction in older males compared to their younger male colleagues. Kooij, Guest, Clinton, Knight, Jansen & Dijkers (2103b) examined the role of “development” and “maintenance” HR practices in the relationships between age and well-being operationalized in terms of commitment, satisfaction and organizational fairness. Confirming their expectations, they found that “development” HR practices (e.g., training opportunities) had detrimental effects on well-being, whereas “maintenance” HR practices (e.g., performance appraisal) had positive effects on well-being among older workers.

Insert Table X.3 about here

A summary of research that explored different facilitating and constraining factors of healthy ageing is shown in Table X.3. Based on this summary, we could conclude that it is important

for older employees to have a good stock of resources they value, to continue engaging in intellectually stimulating activities and activities that help them maintain their social networks and physical fitness, to exercise their personal control at work in order to cope with their demands and to develop positive attitudes towards ageing. Organizations could also help older employees protect their health and well-being by designing non-discriminatory working environments and providing older employees with higher job security (e.g., their jobs are safe at least as far as their chronological age is concerned). Although the research in this field is thriving, much more has to be done in order to understand how healthy ageing can be achieved.

Future research agenda

As we have seen so far, research on healthy ageing to date has been driven by diverse theoretical frameworks trying to shed light on both underlying mechanisms that could explain age effects on health and well-being as well as identifying different protective and constraining factors of well-being in older employees. More research is needed, however, to provide a clearer and more comprehensive picture of how different individual and work-related variables affect health in older employees and their ability to engage in a process of healthy ageing.

First, most of the studies that explored the mechanisms underlying the age-health relationship suggests that as people age they experience changes in personal and contextual aspects of their lives and it is these age-related changes that affect their health and well-being (e.g., improved coping strategies and increased job control as people age). It has to be noted, however, that research to date has largely failed to directly explore these assumptions. In order to test the underlying or mediating effects of such age-related changes on health and

well-being, studies should employ longitudinal designs in which explanatory variables and health and well-being outcomes are measured at multiple points in time. Such research designs would allow a researcher to account for any age-related changes directly and could lend more conclusive support in relation to the ways in which age affects health and well-being.

Second, such longitudinal analysis of age-related changes and their impact on health and well-being would fit the life course approach to health which “emphasises a temporal and social perspective, looking back across an individual’s or a cohort’s life experiences or across generations for clues to current patterns of health and disease, whilst recognising that both past and present experiences are shaped by the wider social, economic and cultural context” (WHO, 2000: 4). Although there is research in developmental psychology and epidemiology that has adopted this life span approach to study individual health, scholars in the occupational psychology and management studies should also start adopting this framework on a larger scale to more rigorously study how occupational and work-related aspects affect individual health over time, particularly taking into consideration the policy initiatives of postponing retirement ages and extending working lives. The life course approach to healthy ageing at work would not only help identify and confirm the key criteria for healthy ageing but it would also allow us to address potential intergenerational differences in achieving healthy ageing. It could also tease out the role of experience from chronological age in explaining the underlying mechanisms of healthy ageing. Namely, most of the research has suggested that positive age effects on health and well-being are due to older employees having more experience, but chronological age and experience may not always be related. For instance, some individuals may have undergone a significant career change later in life and therefore may not necessarily have more experience to cope with their demands

compared to their younger colleagues who have been in that particular line of work for longer. A life course approach could help clarify this and other similar issues related with achieving healthy ageing over time.

Third, in terms of exploring the facilitating and constraining factors of healthy ageing, future research should focus on simultaneously exploring both individual and contextual factors in order to get a much clearer picture of boundary conditions under which health and well-being of older employees can be enhanced. For instance, drawing on SOC theory, future research could explore whether the effectiveness of SOC strategies in achieving healthy ageing is contingent on any work-related characteristics, such as occupational complexity or type of work. It could be that the SOC strategies are particularly useful for fostering health and well-being in older employees who deal with a specific type of work demands (e.g., more complex and mentally challenging) compared to other types of demands (e.g., less complex, more routine). There is also a lack of empirical research in exploring different sets of resources simultaneously. For instance, following the COR theory we could expect that social resources protect older employees' health and well-being but particularly so if they can also rely on having sustainable financial resources. Future research should empirically address such assumptions. Importantly, given that past research to date has found that age has differing effects on different health and well-being indicators, future research should consider various health and well-being indicators simultaneously. This is important to gain more conclusive evidence about what indicators are positively affected by age and which are negatively affected by age.

Finally, future research should develop theory-driven intervention studies to help older employees learn the strategies that could help them achieve healthy ageing. For instance,

following the SOC framework, future research could develop programmes that aim to train older employees in how to use SOC strategies in order to promote positive outcomes in their lives, such as health and well-being (Baltes & Rudolph, 2012). Future research could also design intervention studies that target the development of different resources which according to the COR theory are protective of health and well-being in older employees. Such intervention studies would potentially have a significant impact on healthy ageing, particularly if they employed experimental or quasi-experimental designs with a control group in order to yield meaningful findings.

Conclusion and implications

Although research on healthy ageing is vast, empirical evidence on how age affects health and well-being is still not conclusive enough. On the whole, previous studies suggest that age does not adversely affect employee occupational, subjective and psychological well-being. Negative effects have been mainly observed in relation to physical health symptoms. Different age-related changes in individual lives, motive-structure and coping strategies have been suggested to account for these age effects. Based on the research that has explored different protective and constraining factors of healthy ageing, a set of different practical implications can be drawn at the individual, organizational and policy levels.

At the individual level, we could suggest older employees should accumulate valued resources to achieve healthy ageing. They could achieve that by continuing to or commencing engaging in social activities, such as going to social clubs. The negative effects of age on physical health can be ameliorated by engaging in physical exercise. Older employees could also be encouraged to use the SOC strategies in order to cope with their demands at work more effectively which in turn might protect their health and well-being.

At the organizational level, it seems important that organizations provide older employees with a sense of job security and a future time perspective. In other words, organizations have to communicate to older employees that they are offering them many different opportunities in the future and that they can continue working in their companies, if they wish to do so, in order to enhance their perceptions of an open-ended future time perspective and job security. At the policy level, retirement legislation could be adjusted to endorse the possibility of older employees engaging in bridge employment once they retire from their full-time careers. Although more research is needed to draw more conclusive implications, a combination of these recommendations seems a promising start towards achieving healthy ageing in general and at work in particular.

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Table X.1. Summary of age effects on different health indicators

	Health indicator	Example studies
Beneficial effects of ageing	Occupational well-being	Birdi et al. (1995); Ng and Feldman (2010)
	Mental health	Clark et al. (1996); Ng and Feldman (2013)
	Job satisfaction	Clark et al. (1996); Zacher <i>et al.</i> (2014)
	Emotional exhaustion	Zacher et al. (2014)
Detrimental effects of ageing	Occupational strain	Kirckaldy and Martin (2000)
	Cognitive irritation	Rauschenbach et al. (2013)
	Physical health	Ng and Feldman (2013); Nuñez (2010)
	Insomnia	Ng and Feldman (2013)

Table X.2. Summary of theories and their explanatory mechanisms of age effects on health and well-being

Theory	Explanatory mechanisms	Example studies
Job change hypothesis (Wright and Hamilton, 1978)	Older employees have greater experience, improved skills, higher income, and higher job control that comes with higher occupational status.	Rauschenbach et al. (2013); Siu et al., 2001)
Life span theory of control (Heckhausen et al., 2010)	The use of more internal locus of control and increased use of proactive, problem-focused coping strategies as people age.	Aldwin et al. (1996); Lachman and Weaver (1998)
Socio-emotional selectivity theory (Carstensen, 1995)	Individuals perceive they have less time to live as they age (i.e., they have more limited future time perspective) and they start prioritising different goals relative to their younger peers. Employee health is enhanced if there is congruence between the individual perception of the future time perspective and the type of prioritised goal.	Kooij et al.(2013a); Zaniboni, Truxillo and Fraccaroli (2013)
Mental exercise/ "Use-it-or-lose-it" hypothesis (Salthouse, 2006)	Age-related decline in cognitive abilities such as working memory may lead to impaired health and well-being. This decline, however, can be ameliorated, by engaging in intellectually stimulating activities.	Finkel et al. (2009); Salthouse (2006)

Table X.3. Summary of theories and their proposed facilitating and constraining factors of achieving healthy ageing at work

Theory	Facilitating/ constraining factors of healthy ageing	Example studies
Selective optimization with compensation - SOC theory (Baltes and Baltes, 1990)	The use of (1) selection (setting and prioritizing goals), (2) optimization (obtaining and improving the means of achieving the set goals), and (3) compensation (obtaining alternative means to maintain a desired level of functioning to fulfil the set goals) strategies.	Baltes (1997); Freund and Baltes (2002)
Activity theory (Havighurst, 1963)	Engagement in different productive and social activities such as volunteering, providing help to relatives and neighbours, participating in community organizations, attending social clubs, taking-up educational courses, and engaging in physical exercise.	Potočnik and Sonnentag (2013); Warr et al. (2004)
Conservation of resources - COR theory (Hobfoll, 2001)	Having a good stock of different resources, including motivational (e.g., self-efficacy), social (e.g., having a large social network), financial (e.g., salary, property), and cognitive resources (e.g., working memory).	Wang and Shi (2014)
Continuity theory (Atchley, 1989)	Engaging in bridge employment (i.e., having some sort of a part-time job, as opposed to immediate full-time retirement) before retiring fully from the active workforce.	Dingemans and Henkens (2014); Müller et al. (2013)
Other research following diverse theories	(1) <i>Social identity theory</i> : affective identification with older workers; cognitive identification with older workers and having positive attitude towards ageing. (2) <i>Psychological contract theory</i> : job insecurity a constraining factor (3) <i>Life-span theory of control</i> : personal control (4) <i>Other research</i> : discrimination in the workplace a strong constraining factor; development HR practices a constraining factor but maintenance HR practices a facilitating factor of healthy ageing.	Besen et al. (2015); Cheung and Wu (2014); Kooij et al. (2013b); Mauno et al. (2013)